

illustrating an image of the computed tomography apparatus according to an embodiment of the present disclosure photographing the subject.

[0055] Referring to FIG. 2 to FIG. 4, the table 190 at which the subject 30 is positioned may be positioned at an inside of the bore 105 while moving in the D1 direction. In addition, the table 190 may be moved in left and right directions as well as upward and downward directions so that the central portion of an area of interest of the subject 30 may be in conformity with the central portion of the bore 105.

[0056] The gantry 102 at which the x-ray source 110 and the x-ray detector 120 are mounted may perform a tomographic photographing with respect to an area of interest of the subject 30 while the gantry 102 is rotated in the D3 direction (or a reverse D4 direction).

[0057] A gantry implemented in a conventional computed tomography apparatus is provided to be rotated while receiving a driving force from a driving apparatus such as a motor provided at one side. As one example, the gantry is provided to be rotated while mounted at a rotor provided at the motor. A stator is provided at an outer circumferential surface of the rotor, and the rotor is rotated at one side of the stator while received with an outside power. A bearing is provided in between the stator and the rotor so that the rotor may be rotated. The rotor at which the gantry may be mounted, as well as the stator corresponding to the rotor, is provided at an inside of a housing. Therefore, the housing is provided with larger volume by the rotor and the stator corresponding to the gantry, and the weight of the body of a computed tomography apparatus is provided with heavier weight by the rotor and the stator provided at an inside of the housing.

[0058] According to an exemplary embodiment of the present disclosure, a structure of delivering a rotational force provided with the rotor configured to rotate the gantry may be omitted. By having the rotor omitted, when compared to a conventional practice, the volume and weight of the body of the computed tomography apparatus 100 may be reduced.

[0059] FIG. 5, FIG. 6A and FIG. 6B are drawings illustrating the gantry and a rail according to an embodiment of the present disclosure.

[0060] Referring to FIG. 5, FIG. 6A, and FIG. 6B, the gantry 102 according to an embodiment of the present disclosure may be rotatably provided by use of the principle of a monorail. An outer circumferential surface of the gantry 102 is provided with a rail in the shape of a singular ring, and the gantry 102 may be provided to be rotated along the rail. The straight line passing the central portion of the gantry 102 and the straight line passing the central portion of the rail may be coincident to each other.

[0061] As one example, an outer side of the gantry 102 may be provided with a rail 103 corresponding to an outer circumferential surface of the gantry 102. The gantry 102 may be rotatably provided along the rail 103.

[0062] A driving wheel 104 may be inserted in between the gantry 102 and the rail 103. The driving wheel 104 may be provided in a plurality of units in between the gantry 102 and the rail 103. The driving wheel 104 may be driven along the rail 103 while mounted at the gantry 102. The driving wheel 104 may be rotated while receiving a driving force from an outside driving source. As for another example, the driving wheel 104 may be provided to be rotated while

mounted at the rail 103. The driving wheel 104 may rotate the gantry 102 while rotating at an inner side surface of the rail 103.

[0063] An embodiment in which the plurality of driving wheels 104 is driven along the rail 103 while mounted at an outer circumferential surface of the gantry 102 is described.

[0064] The plurality of driving wheels 104 may be disposed at an inside of a space formed by use of an outer side surface of the gantry 102 and an inner side surface of the rail 103 while being spaced apart from one another. The driving wheel 104 may be driven along the rail 103 while mounted at an outer side surface of the gantry 102. A certain one driving wheel 104a from the plurality of driving wheels 104 may be rotated along with the gantry 102. Therefore, a certain one driving wheel from the plurality of driving wheels 104 may not be continuously positioned at a lower portion of the gantry 102, and may be positioned at a variety of positions such as a left side or an upper side of the gantry 102. As illustrated in FIG. 6B, a first driving wheel 104a positioned at a lower portion of the gantry 102 may be moved to the position of a second driving wheel 104b positioned at a side of the gantry 102 while rotated along the gantry 102.

[0065] As a certain one of the driving wheels 104 may be provided to be positioned at a lower portion of the gantry 102 without being continuously positioned at a lower portion of the gantry as the plurality of driving wheels 104 is rotated, the weight of the gantry 102 may be distributed and supported at the plurality of driving wheels 104. Therefore, when compared to a case in which the certain one of the driving wheels 104 is provided to be positioned at a lower portion of the gantry 102, the driving wheel 104 may be prevented from being damaged.

[0066] The rail 103 may include a first rail unit 103a extended along an outer side circumference of the gantry 102, and a second rail unit 103b extended from an inner side surface of the first rail unit 103a. At least a portion of the gantry 102 may be rotated along the rail 103 while inserted into a space at which the first rail unit 103a and the second rail unit 103b are formed.

[0067] An embodiment in which the portion of the gantry 102 is inserted into the space at which the rail 103 is formed is described above, but the structure in which the gantry 102 is provided to be rotated along the rail 103 is not limited to the above-provided disclosure. For example, a portion of the rail 103 may be inserted into a space formed at an outer side surface of the gantry 102.

[0068] The rail 103 may be provided at an inner side surface of the housing 101. The rail 103 may be mounted at an inner side surface of the housing 101 while separately provided, or the shape of an inner side surface of the housing 101 may be formed together with the rail 103.

[0069] Conventionally, the gantry 102 is rotated while mounted at a rotor, but according to an exemplary embodiment of present disclosure, the gantry 102 may be provided to be rotated along the rail 103 extended along an outer side circumference of the gantry 102, and the rotor at which the conventional gantry 102 is mounted may be omitted. By omitting the rotor, the volume and weight of the body of the computed tomography apparatus 100 may be reduced when compared to a conventional computed tomography apparatus having the rotor.